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Washington, D.C. 20231

PATENT FILING TRANSMITTAL

Transmitted herewith for filing is the Patent Application of: Kenneth Babamoto
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For: "SYSTEM AND METHOD FOR DEVELOPING AND MANAGING THE
HEALTHCARE PLANS OF PATIENTS WITH ONE OR MORE HEALTH
CONDITIONS"

TYPE OF FILING

This new patent application is for a(n):

- ☒ Utility
☐ Design
☐ Plant
☐ Divisional
☐ Continuation
☐ Continuation-in-part

Benefit of a prior filed application

- ☐ This application claims the benefit of an earlier filed U.S. Patent Application under 35 USC 120. Enclosed are ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.
- ☐ Please accord Applicant the benefit of the priority date of _____ to this case pursuant to 35 USC 119. Applicant's claim for priority is based on application _____ filed in _____ on that date.

CERTIFICATE OF MAILING (37 CFR 1.10(a))

I hereby certify that this correspondence is being deposited with the U S. Postal Service "Express Mail Post Office to Addressee" Service under 37 CFR 1.10 as Express Mail No. EL303192740US addressed to the Commissioner of Patents & Trademarks, Washington, D.C. 20231 on June 16, 2000

Date 6/16/2000

Signed: Shari Newman Lipari
Shari Newman Lipari

Filing under 37 CFR 1.53 (Utility) or 37 CFR 1.153 (Design)

- ☒ This is an application filed pursuant to 37 CFR 1.53 or 37 CFR 1.153, permitting receipt of a filing date upon filing of a specification, at least one claim and necessary drawings.
- ☒ In the event any parts of this application are incomplete, please treat this as a filing under 37 CFR 1.53 or 37 CFR 1.153.

ENCLOSURES

Minimum requirements under 37 CFR 1.53(b) (Utility) or 37 CFR 1.153 (Design)

- ☒ 16 pages of specification;
- ☒ 3 - pages of claims;
- ☒ 1 - pages of abstract;
- ☒ 17 - sheets of informal drawings;
- ☒ A Declaration, Power of Attorney & Petition or listing of inventors;
- and**
- ☒ A postcard for return to us as proof of receipt of the above documents.

plus

- ☐ An Assignment of the invention to _____, and an Assignment cover sheet;
- ☐ Verified Statement Claiming Small Entity Status (37 CFR 1.9(f) and 1.27(b))
- ☐ Form PTO-1449 (IDS) and copies of the references listed thereon;
- ☐ A certified copy of _____ (country) patent application number (priority document).
- ☐ A preliminary amendment;
- ☐ Declaration of Biological Deposit;
- ☐ Submission of sequence listing, computer readable copy and/or amendment relating thereto for biotechnology invention containing nucleotide and/or amino acid sequence;
- ☐ An associate power of attorney;
- ☐ Other.

DECLARATION OR OATH

The enclosed Declaration or Oath has been executed by:

- ☐ Inventor(s);
- ☐ Legal representative of the inventors (37 CFR 1.42 or 1.43);
- ☐ Joint inventor or person showing proprietary interest on behalf of an inventor who refused to sign or who cannot be reached and this is a petition required by 37 CFR 1.47 and the statement required by 37 CFR 1.47 is attached;
- ☒ Has not been executed and is enclosed for the purposes of identifying the inventors.

INVENTORSHIP STATEMENT

The inventorship for all the claims in this application is:

- ☒ the same;
☐ not the same and, as an explanation, a statement is/ will be submitted.

LANGUAGE

The application submitted herewith is:

- ☒ in English;
☐ in not in English and in terms of 37 CFR 1.52(d) a verified translation is
☐ attached
☐ not attached.

ASSIGNMENT

A copy of the Assignment of the invention to _____:

- ☐ is attached.
☐ will follow.

FEE CALCULATION

The filing fee has been calculated as shown below:

				SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
BASIC FEE Utility Patent				\$345	\$		\$690	\$690
EXTRA FEES				RATE	FEE		RATE	FEE
INDEP.CLAIMS	1 MINUS 3=	-2	x 39 =	\$			x 78 =	\$
TOTAL CLAIMS	9 MINUS 20 =	-11	x 9 =	\$			x 18 =	\$
<input type="checkbox"/>	MULTIPLE DEP. CLAIM			+130 =	\$		+260 =	\$
<input type="checkbox"/>	ASSIGNMENT			+ 40 =	\$		+ 40 =	\$
<input type="checkbox"/>	RULE 53 SURCHARGE			+ 65 =	\$		+130 =	\$
TOTAL					\$		\$690.00	

- ☐ Amendment cancelling extra claims is enclosed.
☐ Fee for extra claims is not being paid at this time.

FEE PAYMENT

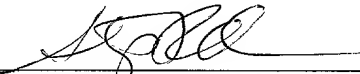
- ☐ Attached is Check No. _____ in the sum of \$ _____ to cover the filing and, if applicable, the assignment fee.
- ☒ Please charge Account No. 23-0800 the sum of \$ 690.00 to cover the application filing fee.

FEE DEFICIENCY

- ☒ The Commissioner is authorized to charge (or credit any overpayment) to deposit account No. 23-0800:
- ☒ Any additional filing fees required under 37 CFR 1.16, except Rule 53 filings, which will be paid within the time permitted by PTOL 1533.
- ☐ Assignment Recordal fees.
- ☒ The filing fee and surcharge under 37 CFR 1.16, patent application processing fees under 37 CFR 1.17 and patent issue fees under 37 CFR 1.18 are intended to be paid by our firm as they arise. As no abandonment is intended by any inadvertent nonpayment of fees, the Commissioner is hereby authorized to charge payment of such fees as from time to time come due, if not paid prior to due date to our Deposit Account No. 23-0796 .
- ☒ A duplicate copy of this sheet is enclosed.

Respectfully submitted,

Dated: 6/16/00



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**SYSTEM AND METHOD FOR DEVELOPING AND MANAGING
THE HEALTHCARE PLANS OF PATIENTS
WITH ONE OR MORE HEALTH CONDITIONS**

ABSTRACT OF THE INVENTION

The present invention is an automated disease management system designed to assist healthcare providers in the care management of patients with one or more health conditions. More particularly, this invention relates to a system and method for assisting healthcare providers in developing and monitoring the implementation of patient care plans.

BACKGROUND OF THE INVENTION

Managing the healthcare process is a complex and expensive area of patient care. Traditionally the health concerns of patients are presented to a healthcare provider who in turn performs a diagnosis, therapeutic selection, resource selection, treatment regime and follow-up visits. This normal course of addressing the health concerns of patients can be further broadened to manage the healthcare of a patient by assisting patients in identifying various health concerns and conditions and planning for immediate and long-term actions in order to assist in managing them, particularly those which may be chronic or eventually curable. An emphasis has also been placed on preventive medicine and wellness in response to increasing costs of healthcare. The health concerns of patients now encompass preventive medicine and wellness.

Prior methods for managing the healthcare of patients included manual data entry systems in which data were entered into paper files of patients which were individually studied to render individually appropriate care plans or to collect information regarding general areas of care in order to generate substantive statistical information. It is self-evident that such methods of developing individual or general care plans for patients were highly labor-intensive, inefficient, time-consuming and ineffective.

More recently, as efficiency became a concern, attempts have been made to develop and utilize standard patient questionnaire forms, descriptions of conditions and

treatment and other standardized information gathering forms in order to collect and study healthcare data. Newer systems integrate and automate the analysis of healthcare data, but they are mostly limited to financial data for accounting and administrative purposes.

Also known in the art are comprehensive systems and methods of managing patient scheduling, insurance, clinical examination, billing, entering and displaying data to a physician, updating patient data, recording diagnosis and prescription information. These systems allow for concurrent recording of examination and diagnoses notes in a database during patient examination. One such system and method is disclosed in U.S. Patent No. 5,772,585. Another such system, disclosed in U.S. Patent No. 5,953,704, collects information on individuals having a health concern at any stage, guides the user to a system-selected treatment based on the information collected, and compares an actual or proposed treatment with the system-selected treatment.

However, such systems as these known in the art do not assist healthcare managers and patients in developing specialized healthcare plans that are individually tailored for a particular patient's history, symptoms, and diagnoses for one or more than one health conditions. Accordingly, there is a need for an automated system that assists healthcare providers and patients in achieving long-term and short-term patient healthcare goals such as weight loss plans, exercise plans, alcoholism and smoking programs and other forms of health improvement actions on an individual-patient basis.

SUMMARY OF THE INVENTION

The present invention is an automated, disease management system designed to assist healthcare providers in the care management of patients with any of several disease or other health-related conditions. The system provides for the efficient capturing of patient information that permits information to be processed in connection with a plurality of clinical modules containing data on various medical conditions to produce treatment recommendations, patient and task tracking facilities and outcomes reporting, all from a single integrated application.

The system of the present invention also supports a wide range of case management functions, with tools such as: patient-specific task lists, reminders, notes, tracking of patient-specific clinical history and telephone contacts and even the automated generation of report and reminder correspondence. The system can be utilized by a variety of healthcare providers such as physicians, physician assistants, nurses, administrators, etc. who each contribute to the development of a specialized care plan for patients based on their prior history, diagnosis, clinical notes, treatment, medical staff assessments, diagnosis, observations, therapy sessions, follow-up visits, medication and any other factors that may affect the patient's medical conditions. The system is expansive in that it allows for a large amount of information to be added to the database and allows access to an informative reference guide in assisting healthcare providers in understanding more about a particular health condition with which a patient is diagnosed, including its various associated symptoms, and various methods of coping with the condition, ways to cure the condition and various care plans that could be established for a particular patient depending on the gravity of the particular condition and the patient's age, overall health, other conditions she may be diagnosed with, and other factors.

The system allows the user to enroll patients having one or more health conditions, i.e., alcoholism, asthma, high cholesterol, compliance, diabetes, high blood pressure, smoking-related conditions and many others, into an array of case management programs. In addition, associated with such case management programs are appropriate actions that can be selected for each selectable care plan category and related tasks that can be scheduled for each patient enrolled in a care plan program. With the selection of a main care plan category, all available actions specific to the selected healthcare category appear on the screen for selection by the healthcare provider. These include guidelines, suggested interventions and other action items that are suited to assist in managing the patient's particular conditions. In addition, the system contains the ability to consider the interactions among health risks, medications, age of patient, enrollment into particular care plans, selected action items and other factors.

The system of the present invention uses the metaphor of a Master Cabinet with several file drawers, each drawer containing folders which contain data and functions

related to patients, providers and tasks. Folders for each patient contain tabs such as the Care Plan tab associated with development of a care plan and related action items for each patient. Associated with selection of each action item selected is a reference tool that generates the corresponding section of its reference drawer resource to assist the care manager or patients in understanding and being more informed about the particular area of care.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a flow chart of one embodiment of the system for formulating a healthcare management plan for a patient.

FIG. 2 shows a Care Plan tab screen and its features.

FIG. 2a shows a Care Plan tab screen with the remainder of its fields visible (after having scrolled the window to the right using the right-arrow button).

FIG. 3 shows a New Care Plan Actions screen identifying various available care plan categories and actions items.

FIG. 4 shows a New Care Plan Actions screen showing how one can select between care plan categories or program/contacts.

FIG. 5 is a New Care Plan Actions screen identifying various action items for a selected program/contacts.

FIG. 6 is a New Care Plan Actions screen showing the drop-down list for the "Assign To:" field.

FIG. 7 shows a New Care Plan Actions screen showing the selection of an item in the New Care Plan Actions list in preparation for the new, edit and remove button screens.

FIG. 8 is a view of the New Care Plan Action box after selecting the new button as shown in Fig. 7.

FIG. 9 is a view of the Edit Care Plan Action box after selecting the edit button as shown in Fig. 7.

FIG. 10 is a view of the Patients Drawer.

FIG. 11 is a view of the Providers Drawer.

FIG. 12 is a view of the Tasks Drawer.

FIG. 13 is a view of the Demographics tab folder found within the Patients Drawer as shown in Figures 2 and 10.

FIG. 14 is a view of the Enrollment tab folder found within the Patients Drawer as shown in Figures 2 and 10.

DETAILED DESCRIPTION

From the user's perspective, the system of the present invention acts as a "Master Cabinet" with several file drawers as shown in Figures 10-12 each drawer containing "folders" which in turn contain data and functions related to patients (1), providers (2) and tasks (3). Folders for each patient contain tabs within the patients drawer (1) as shown in Figure 2, for example, for Demographics (4), Enrollment (5), Patient Questions (6), Medications (7), Clinical Information (8), Notes (9), Care Plan (10), and Task List (27). For providers, as shown in Fig. 11, the overall "drawer" view shows, as an index to the contents of the drawer, a list of providers by name, provider identification number and specialty. Within the drawer, each provider "folder" contains more complete information about each provider.

After a user (which can be a physician, nurse, health care provider, health care manager, administrator, etc.) has signed on to the program, she can collect from its database, among other information, clinical data such as lab results, physical exam and patient questions for various patients. A user may also enroll patients into various case management programs through the system commands. The user may also view historical data and activities for a patient, view and print provider reports, create tasks associated

with patient care, sort and edit task information such as patient visit scheduling, patient details, patient phone number and best time to contact, provider name, task status and priority.

The user can use all the data previously entered for a patient such as patient questions, medications, clinical information and notes tabs to assist in formulating an individual and unique care plan for each particular patient. The user selects appropriate action items for each category and uses the corresponding data found in the other “drawers” of the “cabinet” to assist with selecting all care plan action items for a particular patient.

The system of the present invention is thus a resource for extensive patient information that is used to formulate a healthcare program unique to each patient, that assists both health care providers and patients in managing a particular patient's condition(s).

Figure 1 is a flow chart of one embodiment of the invention showing the process of developing a suitable healthcare plan for a particular patient. In this process, the following sequence of steps would generally occur during or after patient contact, although the actual sequence may vary depending on one's preferences, the situation and the appropriateness of particular actions for individual patient circumstances.

The system user would first review any tasks scheduled (100) for herself that day as shown in Figure 1, by clicking on the Tasks button (3) as shown in figure 2. (It should be understood that, while this description uses the term “user” of the system, in fact the user could be a physician, physician assistant, nurse, administrator, etc.) The tasks button (3) opens the Tasks Drawer and enables the user to view what tasks have been scheduled. Figure 12 is an example of what a user may find in the Tasks Drawer.

If a patient visit was a scheduled task, the user would then open the patients' drawer (101) as shown in Figure 1, by clicking on the Patients Drawer button (1) as shown in Figure 2. If the visit is the patient's first contact with the healthcare provider, the user would enter new patient demographics (103) as shown in Figure 1, by clicking the New button (11) as shown in Figure 2 and entering personal data for the patient. In

the preferred embodiment, the only fields that must contain data are: First Name (134), Last Name (133), Birth Date (136), Sex (137) and Patient ID (135) as shown in Figure 10. If the patient is not a new one, the user would proceed to select that patient's file (104) as shown in Figure 1, by first clicking on the patient's name from the patient list (30) file folder as shown in Figure 10 (which lists every patient alphabetically by last name) and then opening the highlighted patient's file folder (31) (Sandi Aronson (138) is highlighted as shown in Figure 10) as shown in Figures 2 and 10. The resulting screen seen after opening the patient's folder is shown in Figure 2.

From within the patients drawer (1) as shown in Figures 10, the user would click within the row containing the name of the patient (138) she wishes to select and click the open button (131) to access all information for that particular patient. In the preferred embodiment, the information is organized into eight tabs or sections within the folder with tabs as shown in Figure 2, for demographics (4), enrollment (5), patient questions (6), medications (7), clinical information (8), notes (9), care plan (10) and task list (27). The user then may edit any demographic information (105) as shown in Figure 1 for the selected patient, by clicking the edit button (132) while in the patient list folder (30) as shown in Figure 10 or while in the demographics tab (4) of the patient's record folder (31) by clicking on the edit button (150) as shown in Figure 13.

The patient should be enrolled into one or more programs (106) as shown in Figure 1, before proceeding with other procedures such as administering questionnaires, entering medications, and formulating a care plan, and a patient may be enrolled in multiple programs. To enroll a patient, the user opens the patient record folder (31), clicks the enrollment tab (5) as shown in Figure 14, to view the patient's enrollment history, then clicks on the new button (11) and then clicks on the new care plan actions option as shown in Figure 15, by first clicking on the drop-down arrow (29) located next to the new button (11) as shown in Figure 14 and selecting the care plans action option (160) as shown in Figure 15. The user next selects the name of the program (50) in which she wants the patient enrolled from the New Care Plan actions screen as shown in Figure 3. The user may also enroll a patient into a program for which she is currently

disenrolled as shown in the patient's enrollment history in Figure 14 under the Disenroll Date (157) or Disenroll Reason (158) column. The user simply selects the disenrolled program for e.g. Asthma Program (156) and then clicks the enroll button (155) to enroll the patient into the particular program as shown in Figure 14.

Next the user asks the patient prescribed questions for each type of contact, *i.e.*, initial or follow-up (107) as shown in Figure 1. Depending on the type of contact, initial or follow-up, within each program there are suggested patient questionnaires which can be accessed by clicking on the patient questions tab (6) in the patient record folder as shown in figure 2 and then clicking the new button (11). The appropriate radio buttons and checkboxes can be clicked to select the contact types and question sets of the user's choice. The user has the option of printing, viewing or both the Patient Reported Information report upon completion of the questionnaire.

The user may next proceed to enter or modify medication information (108) as shown in Figure 1. Medication information will usually come from the patient or the patient's healthcare provider. To enter or modify medication information, the user clicks the Medications tab (7) as shown in Figure 2 in the Patient Record folder (31). The user next clicks the New button (11) to enter new medications or clicks an existing medication in the list and clicks the edit button to make changes. After the medications are entered, the user can reference the list in the Medications tab to check for drug interactions, contra-indications, duplicates, etc. The user may proceed to check the list of medications in the medications tab (7) for any drug interactions, contra-indications, duplicates, etc. (109) as shown in Figure 1, that a physician may have noted for the patient. The user may next enter or modify clinical information, *i.e.*, vital signs, clinical assessment of self-monitoring techniques and compliance assessments (110) as shown in Figure 1. The user simply clicks the clinical information tab (8) as shown in Figure 2 in the patient record folder (31) and then clicks the new button (11) to enter new information or clicks the edit button to modify information that is highlighted in the list. The list provides a summary of patient data.

The user may next enter any additional notes (111) and comments for each patient as shown in Figure 1. To create a new note, the user may click the Notes tab (9) as shown in Figure 2 in the Patient Record folder (31) and then click the New button (11). To read or modify an existing note, the note should be highlighted in the list and the edit button clicked to make changes.

The user may review the data provided in patient questions (112), review medications (113), review clinical information (114), and review the notes tab (115) as shown in Figure 1. Finally, the user may begin to formulate a care plan by clicking on the care plan tab (116) in the patient record folder and then clicking on the new button (117) as shown in Figure 1.

After the user has reviewed the patient questions, medications, clinical info, and notes tabs, she is ready to formulate a care plan. Appropriate actions can be selected for each category selected by clicking the add button (64) as shown in Figures 3-7 each time a new action item is selected (118) as shown in Figure 1 and clicking the OK button once the user has completed her selection. Once the user has formulated the complete care plan for the patient, they can be viewed in the care plan tab (119) and the user can utilize the pooled information for a particular patient to conduct patient education and interventions (120) as shown in Figure 1.

When the user clicks the underlined items in the care plan list (121), education material materials for that item appear on the screen. For each action, the Complete button drop-down list (13) may be utilized to note the status of actions with either planned, pending, complete or delete action as shown in Figure 2. The actual status for each assigned action is found in the status (23) column as shown in Figure 2.

After the user has entered patient data and care plan information and the clinician administers the educational intervention, the user can print a physician update report for the patient's records or for the physician (122) as shown in Figure 1. The patient update report is useful for reviewing care plan items and viewing the status of clinical measurements and medication. To run a report, the user may click the Reports button

(16) from any tab in the Patient Record folder (31) as shown in Figure 2. Finally, the user may schedule tasks to help manage future visits and reminders for the care manager (123) as shown in Figure 1. To create a new task, the user clicks the Task List tab (12) found in the Patient Record folder (31) and then clicks the New button (11) as shown in Figure 2. To view or modify an existing task, the user may click the Edit button when that task is highlighted in the list. At this point, the healthcare management process is complete for that particular patient visit (124) as shown in Figure 1.

The system consists of at least two overall configuration modes. A single user can operate the system in a standalone configuration. Alternatively, a workgroup configuration is available to enable more than one user to access the system from more than one workstation. The workgroup configuration allows all the users to share information about the patients, providers and tasks entered in the system. Such system would allow access through an online database with connection through a network or over a modem. In either case the hardware components are standard and well known to persons skilled in the personal computer art, including personal computers, associated displays and printers.

In one embodiment of the invention, the system as described in connection with FIG. 1, can be thought of as a file cabinet which contains three main drawers – patients (1), providers (2) and tasks (3). The user simply clicks the drawer button (1, 2, or 3) of her choice located on the left side panel of the screen as shown in Figure 2. The first folder in every drawer of the file cabinet contains a list of all the items in the drawer. For example, the Patients Drawer (1) has a patient list folder in which both a general tab and personal roster of patients for a particular user which may be accessed. The Providers Drawer has a Provider List folder and the tasks drawer has a Task List folder.

Each drawer contains a list folder which serves as an index to all the items in that drawer. Folder labels at the bottom of the screen indicate what folder are open and which one the user is currently using. For example, the first folder in the patients drawer is the patient list folder. If the user selects a patient from the list by double-clicking their name, a new folder is opened containing the details on the highlighted patient name. The folder

label will display the patient's name. Labeled tabs appear along the top of some screens which are sub-folder within the open folder. The function buttons are at the top of the window. These are context-sensitive button bars which may change depending on what drawer, folder, or tab the user is using. The four buttons located on the bottom left hand corner of the window are referred to as global buttons which include references (32), help (33), options (34), exit (35) as shown in Figure 2. They are available regardless of which drawer or folder the user is located in. Clicking on the references (32) button displays the help topics references window which allows the user to either select a topic for further inquiry or to run a search for a word or topic the user is seeking further information regarding.

Figure 2 is a snapshot of the patients drawer that includes several tabs such as Demographics (4), Enrollment (5), Patient Questions (6), Medications (7), Clinical Information (8), Notes (9), Care Plan (10), and Task List (27). The Care Plan (10) tab is highlighted in this figure 2 since it has been selected. The Care Plan (10) tab contains all care plan action items defined for the selected patient., Sandi Aaronson, as shown on the bottom tab. The care plan action items are selected and entered into the system by the user. Each patient's record folder (31) will have access to her own care plan (10) tab. The individual care plan programs must be developed by the user to suit the particular patient's needs or patient requests which lends itself to being a patient-centric application. If the patient has any goals or improvements in their health or lifestyle, such endeavors can be set for the patient and monitored by the user in the care plan tab (10). All the various care plan action items previously associated with a particular overall care plan selected for this patient appears in the Action column (28). Care plan action items are organized into different categories such as Alcohol, Cholesterol, Exercise, High Blood Pressure, and Smoking. A user can select whether to view the action items for the current day or select a day of her choice. The action date (22), status date (24), status (21) and the identity of the entity to whom the action is assigned ("Assign To") (25), and specific instructions (26) as shown in Figure 2a for that particular action are all available in the Care Plan screen. The "Assign To:" field (25) allows the user to see action items defined only for a Patient, Care Manager or Physician.

The “Action date:” field (22) allows the user to select a date on which the action item(s) took place. The “Status:” field (21) allows one to choose to see each care plan component or only the subset that are planned, pending, completed or, possibly, deleted items.

As shown in Figure 2, the system of the present invention acts as a “master cabinet” having several drawers. Each drawer contains data and functions related to various functional areas i.e. Patients (1), Providers (2) and Tasks (3). Each patient’s folder selected after selection of patients drawer (1) includes a series of patient-centric tabs shown in Fig. 2, including demographics (4), enrollment (5), patient questions (6), medications (7), clinical information (8), notes (9), care plan (10) which has been selected in Figure 2, and task list (27).

The Care Plan tab (10) contains several function buttons including, as can be seen in Fig. 2: New (11), Task (12), Complete (13), Refresh (14), Print (15), Reports (16) and Close (17). The New button (11) opens the New Care Plan Actions dialog box as shown in Figure 3, for entering new action items based on the categories chosen and care plan developed by the user for a particular patient. Clicking the New (11) Button’s drop-down arrow (29) as shown in Figure 2, will display a list of other types of activities such as creating a note or working with medications. The Task (12) button opens the New Task dialog box and enables the user to create a task from the selected action item. It is not available when a completed action item is highlighted. Selecting the Complete (13) button marks the selected event as complete. Selecting the Complete button’s drop-down arrow displays a list of other status options you can choose for the selected task such as Pend(ing), Complete, Delete. Once a task is marked as complete, the Complete button is no longer available. The Refresh (14) button refreshes the screen with any changes from the database. The Print (15) button prints the entire list. Clicking on the down-arrow button enables the user to go directly to Print Preview (to preview the list before printing). The Print Setup option allows the user to display a window where one can change or view the printer’s default settings. The Reports (16) button enables one to display the Reports dialog box wherein various report forms can be generated depending

on the user's preferences and goal at hand. The Close (17) button permits the user to close the current Patient Record folder and returns to the General Patient list tab (30) of the Patients Drawer or the most recently accessed Patient Record folder that is still open (31). The Care Plan tab (10) includes several selection criteria fields:

- Assign To (18) -- wherein all action items are shown automatically. This field is used to see action items defined only for a patient, care manager or physician.
- Action date (19) -- which allows one to select a date on which the action item(s) took place. The browse button “...” (21) can be used to select a date.
- The status button (20) -- an action item with any status shown automatically. This criteria is used to see only planned, pending, completed or deleted action items.
- The Care Plan tab (10) also consists of several column headings. The action (21) field displays the name of the action item.
- The action date (22) field displays the date and time the action item was started.
- The status (23) field displays either the planned, pending, completed or deleted field.
- The status date (24) field displays the date and time the status was last changed.
- The assign to (25) field displays patient, care manager or physician.
- The specific instructions (26) field displays any comment associated with this action item as shown in Figure 2a.

The New Care Plan Actions Dialog Box (61) as shown in Figure 3 can be accessed by clicking the New (11) button in the Care Plan (10) tab of the selected patient record folder (31) as shown in Figure 2. The user can select an action that is appropriate to the category or program/contacts of their choice as shown in Figure 3. The user may create new actions, select actions from the list, edit existing actions, or remove actions already selected. The Edit (59) and the Remove (60) buttons become enabled when an action is highlighted in the New care plan actions list (58). When category (52) is selected in the upper-left drop-down list in the New Care Plan Actions dialog (61) box as shown in Figure 4, the list box below it contains each available healthcare category (50) including “All” categories as shown in Figure 3. The user may either select the category list (52) or the “Program/contacts” (65) list as shown in Figure 4, from the category drop down list (50). As shown in Figure 5, the program/contacts (65) list contains contact types (66) such as none, all, initial contact, and follow-up contact for each available program (i.e. asthma, diabetes, heart failure, healthy lifestyle and others). If the category (67) field is selected in the upper-left drop-down list of the New Care Plan Actions dialog box (61), all available actions specific to the selected healthcare category (50) selected appear as shown in Figure 3. These can include guidelines, suggested interventions, and other action items for selection by the user. If Program/contacts (65) is selected, guidelines specific to the selected type of contact for the selected program (initial, follow-up, etc.) (66) are available in the action items (69) box as shown in Figure 5. As shown in Figure 6, the Assign To: (54) field permits the user to select either a care manager, patient or physician (70) to a particular new care plan action item selected. There are column headings that are displayed in the New Care Plan Actions (61) dialog box as shown in Figures 3-7: the Assign To (62) column heading shows to whom the action is assigned, the Action (63) column heading shows the name of the heading, and the Specific Instructions (55) column heading shows miscellaneous notes regarding the action. The following buttons appear in the New Care Plan Actions dialog box: the New (56) button is utilized to create a new action that does not already appear in the list. This essential tool permits a Care Manager or Physician to develop highly unique care plans

for patients depending on various factors manifested in the patient which among other factors are diagnosis, clinical notes, lab results, personality traits, flexibility of the patient, mental and emotional condition or state, individual preferences and tendencies, and progress notes. The Add (64) button adds the highlighted action to the New care plan actions list (49). The Edit (59) button allows modification to the highlighted action in the New care plan actions list (49). The Remove (60) deletes the highlighted action from the New care plan actions list (49).

Figure 7 is a screen display of the New Care Plan Actions box (61) with a particular New care plan action selected i.e. the Diet and Nutrition: AHA Step I and II Diet (80). From this point, the healthcare manager may proceed to exit, add new action items, edit already added action items, remove action items or simply exit from the screen.

If the healthcare manager seeks to insert a new care plan action, the New Care Plan Action dialog box (90) as shown in Figure 8 appears by clicking the New button (56) in the New Care Plan Action dialog box (61) as shown in Figures 3-7. If an action is sought which does not appear in the New Care Plan Actions dialog box list (58), one can now be created by the user. As shown in Figure 8, New Care Plan action box (90) appears once the New button (56) has been selected as shown in Figures 3-7. The New Care Plan Action box (90) permits the healthcare manager to input action items and specific instructions for a particular patient that are not otherwise found among the existing selection of action items (58) as shown in Figure 7. The New Care Plan Actions box (90) permits the healthcare manager to develop the most suitable and unique management care plan for the particular patient whose needs may not be necessarily met by the already provided selection of action items (58). As shown in Figure 8, the assign to (91) field permits the action to be assigned to the patient, care manager or physician. The action items (92) field is a text field for entering the name of the care plan action that one wants to create. The specific instructions (93) field is a text field for entering individual notes regarding the care plan action selected for the particular patient.

If a healthcare provider wanted to enroll a patient into more or new care plan actions, the provider would simply select the new (11) icon which would generate a new menu and screen as shown in Figure 3. The New Care Plan Actions Screen (61) as shown in Figure 3 includes various categories of care plans. If, for example, the “Asthma” category (51) was selected, then the various corresponding “Action Items” would appear in the Action Items screen (52) particular to the Asthma category (51) and from which several actions could be selected for a particular category of care for a patient.

Figure 7 shows the screen from which the healthcare manager may proceed to edit a particular care plan action that was already selected i.e. the Diet and Nutrition: AHA Step I and II Diet (80). From this screen, the Edit button (59) can be selected. As shown in Figure 9, the Edit Care Plan Action box (95) appears after selecting the Edit button (59). The healthcare manager may now edit the Assign to (96), or the Specific Instructions (98) fields in accordance with a change in the patient’s needs, progress or simply a change in the type of care plan action originally selected for the patient. The Action Item (97) can not be edited at this screen. The user at this point is editing the assign to (96) and specific instructions (98) field associated with the pre-selected action items (97).

It is intended that the foregoing detailed description be regarded as illustrative rather than limiting, and that it be understood that the following claims, including all equivalents, are intended to define the scope of this invention.

We claim:

1. A system for assisting a user in developing, administering and monitoring healthcare plans for patients having multiple conditions, said system permitting the viewing of data organized from a plurality of perspectives including at least the perspectives of patients, healthcare providers and tasks related to a patient's healthcare plan to be administered by the providers, the system comprising:

(a) a processor having associated input, memory and display means;

(b) the memory means being capable of retrievably storing data comprising (i) patient records having multiple fields of health-related data for each of a plurality of patients, (ii) healthcare plan data, (iii) patient demographics, (iv) information about a plurality of healthcare providers and (v) healthcare tasks relating to each patient and assigned to providers;

(c) the display means being capable of displaying at least

(i) a task view that presents a list of tasks scheduled for accomplishment by a provider during a selected time period;

(ii) a provider view that presents, at the user's option, either a list of providers and a first body of information about each provider or a second, more extensive, body of information about a particular one of said advisors; and

(iii) a patients view that presents, at the user's option, either a list of patients and associated general information or individual patient records, each patient record comprising a plurality of fields of healthcare-related data viewable, at the election of the provider, from the perspective of one or more of the group of aspects comprising demographics, enrollment data, medication, clinical information, notes, care plan and task list;

(d) means including the input means for entering into the memory means a new or modified patient record comprising health-related data collected during a patient

interaction with the user, the record including at least demographic data, healthcare history data, appointment notes, clinical notes and care plan actions, the care plan actions including, at the user's option, the assigning of a provider to the patient based on data received during a patient interaction; and

(e) means responsive to selection of a care plan by a user for retrieving from the memory means and presenting on the display means guidelines and possible interventions related to the plan and for permitting the user to select particular care management plan for a patient from the various care plans, wherein said care management plan can be uniquely created by said user for said plurality of patients having at least one health condition.

2. The system according to claim 1, further including means for selecting care management plans in response to various information collected regarding one of the patients.

3. The system according to claim 2, further including means for devising a care management plan for at least one of said patients by allowing the user to select from various care plans, wherein said care management plan can be uniquely created by said user for said plurality of patients having at least one fitness and wellness goal.

4. The system according to claim 3, wherein said care management plans comprise categories selected by the user.

5. The system according to claim 4, wherein said categories comprise associated action items.

6. The system according to claim 5, wherein said action items comprise items selected from the group consisting of fitness and wellness programs, fitness and wellness goals, medications, testing and monitoring programs, informational programs, care plan goals, family and social support programs, disease specific organizations, signs and symptoms, self-monitoring programs and miscellaneous action items selected by user.

7. The system according to claim 6, wherein said miscellaneous action items are created to manage the healthcare plan of a patient, wherein said patient has unique health conditions that are not manageable by the selection of any existing miscellaneous action items.

8. The system according to claim 7, wherein said system permits the user to assign said action items to another user selected from the group consisting of physician, healthcare manager, and patient.

9. The system according to claim 8, wherein the patient is assigned the role of monitoring one or more action items selected by the user for her care plan.

NY1.871057/09/\$_4109! DOC\67606.0003

FLOWCHART

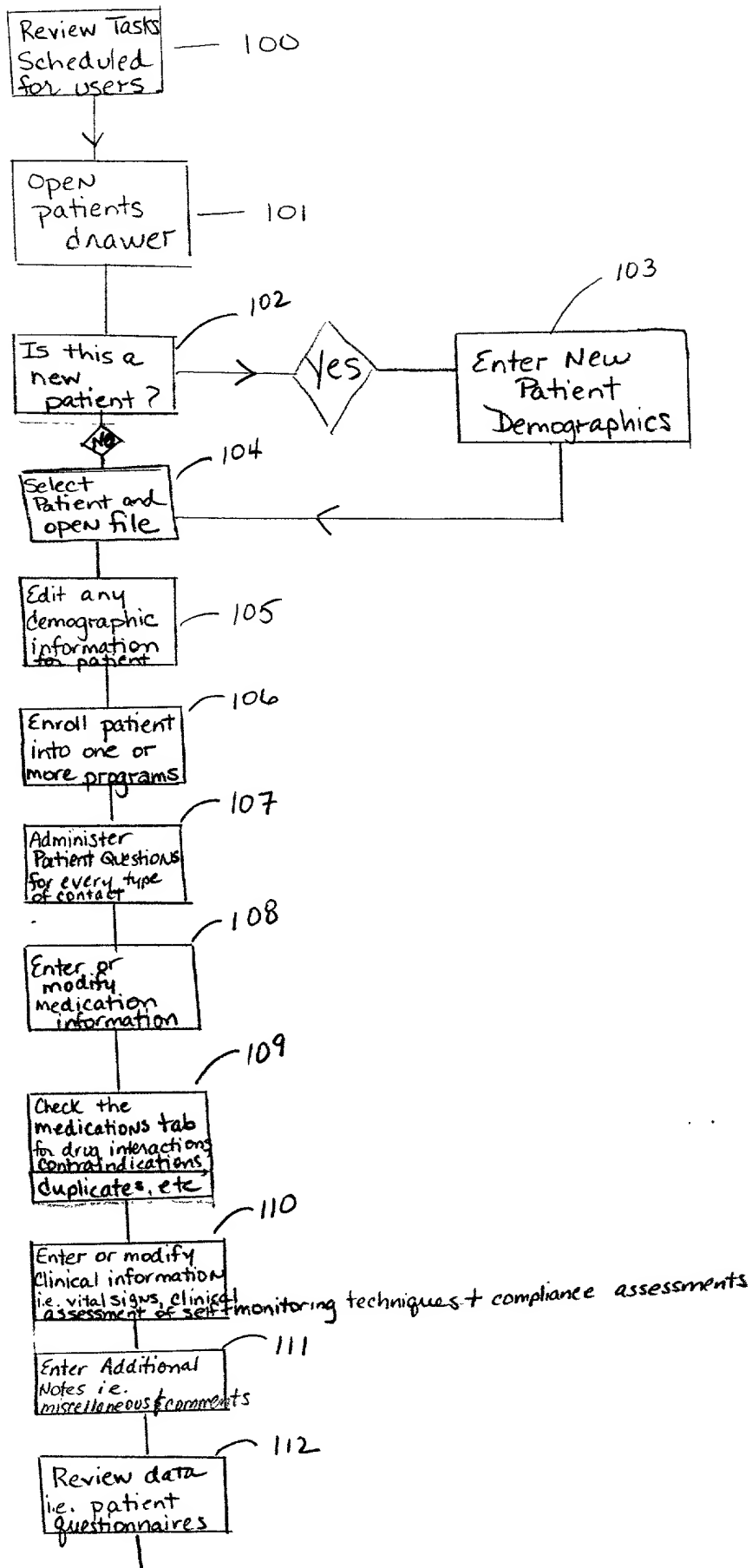


Fig. 1

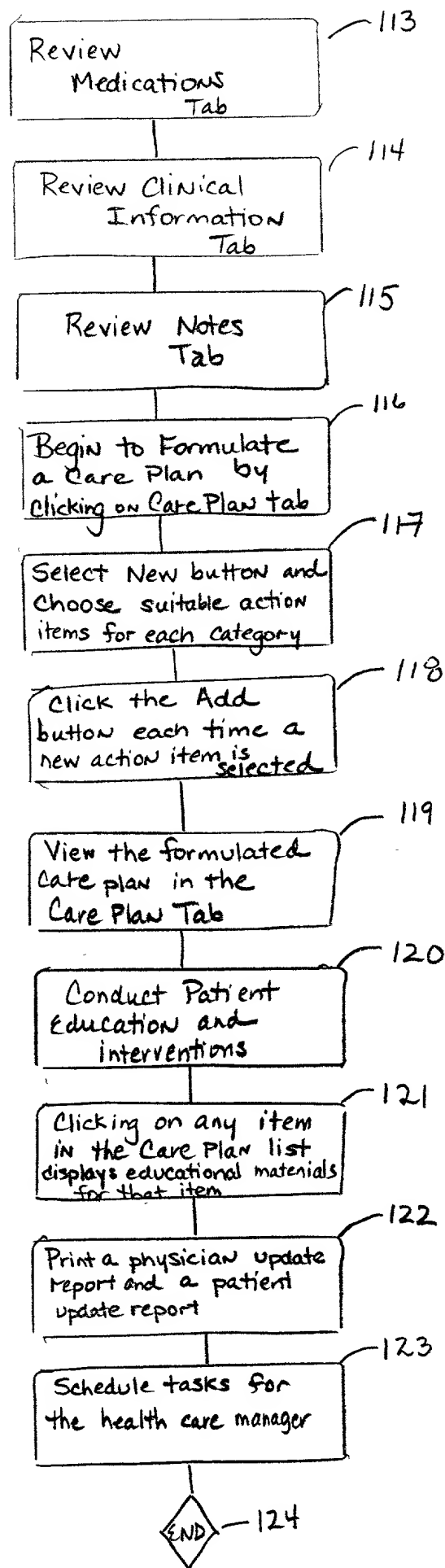


FIG 1 (CON'T)

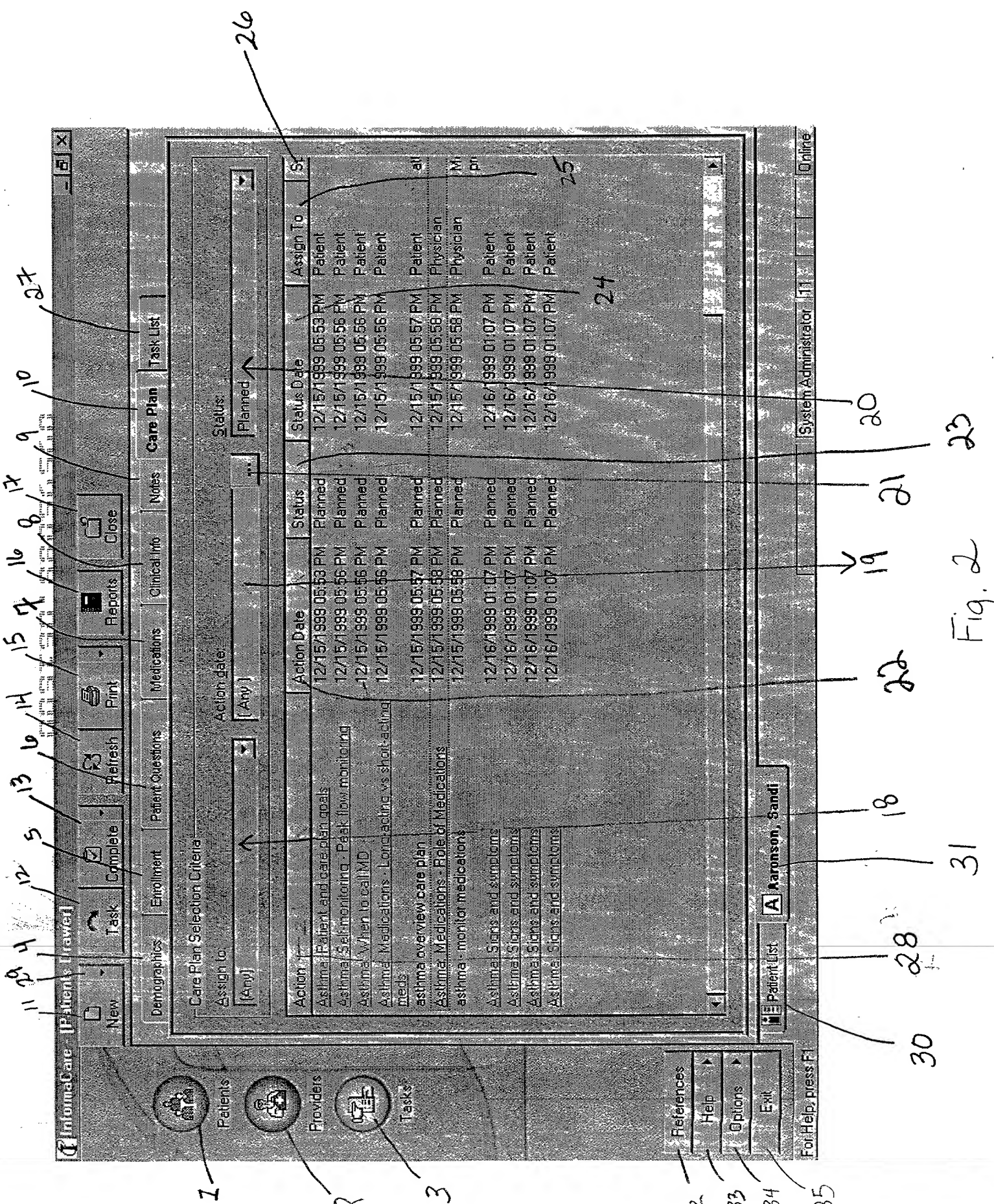


Fig. 2

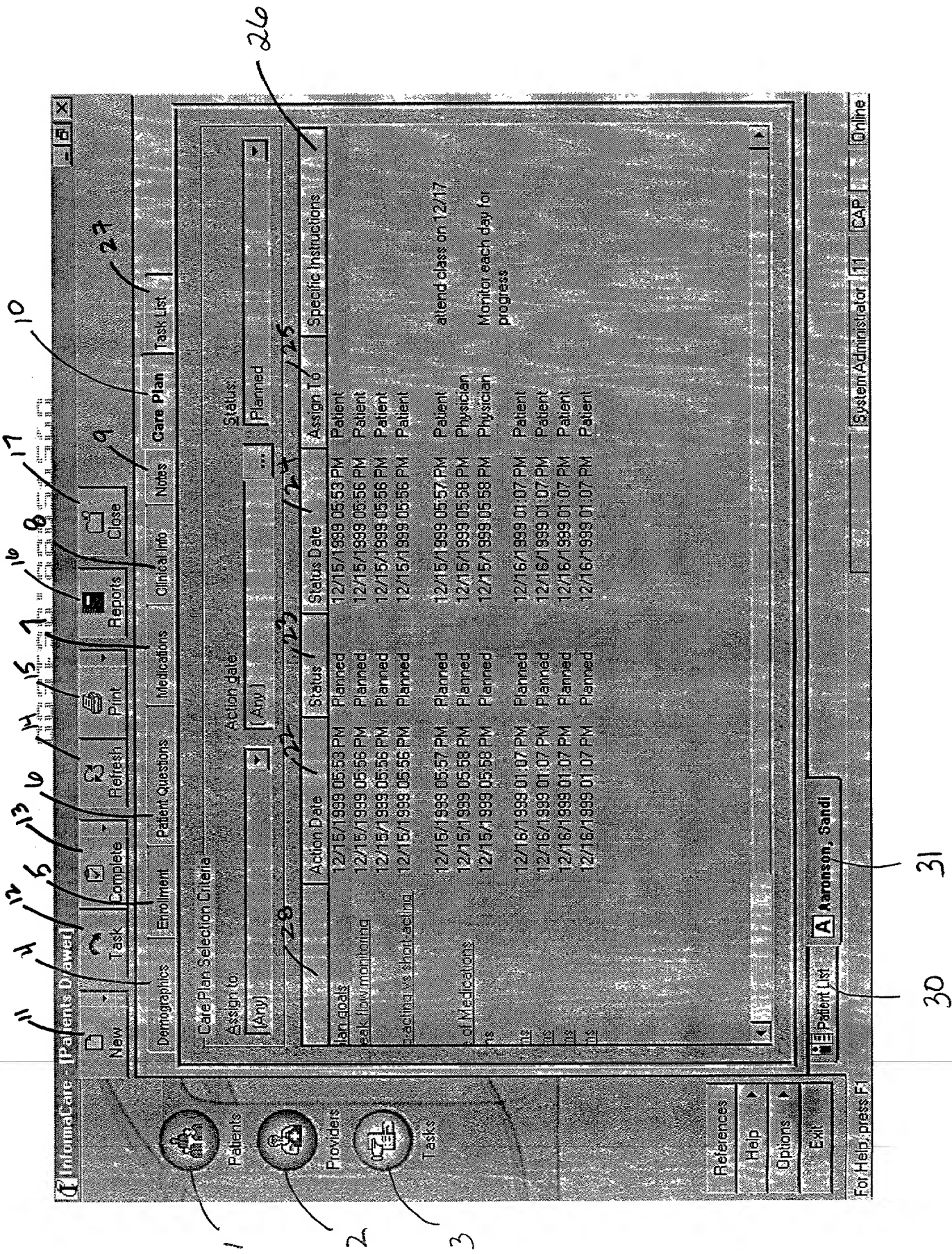


Fig. 2a

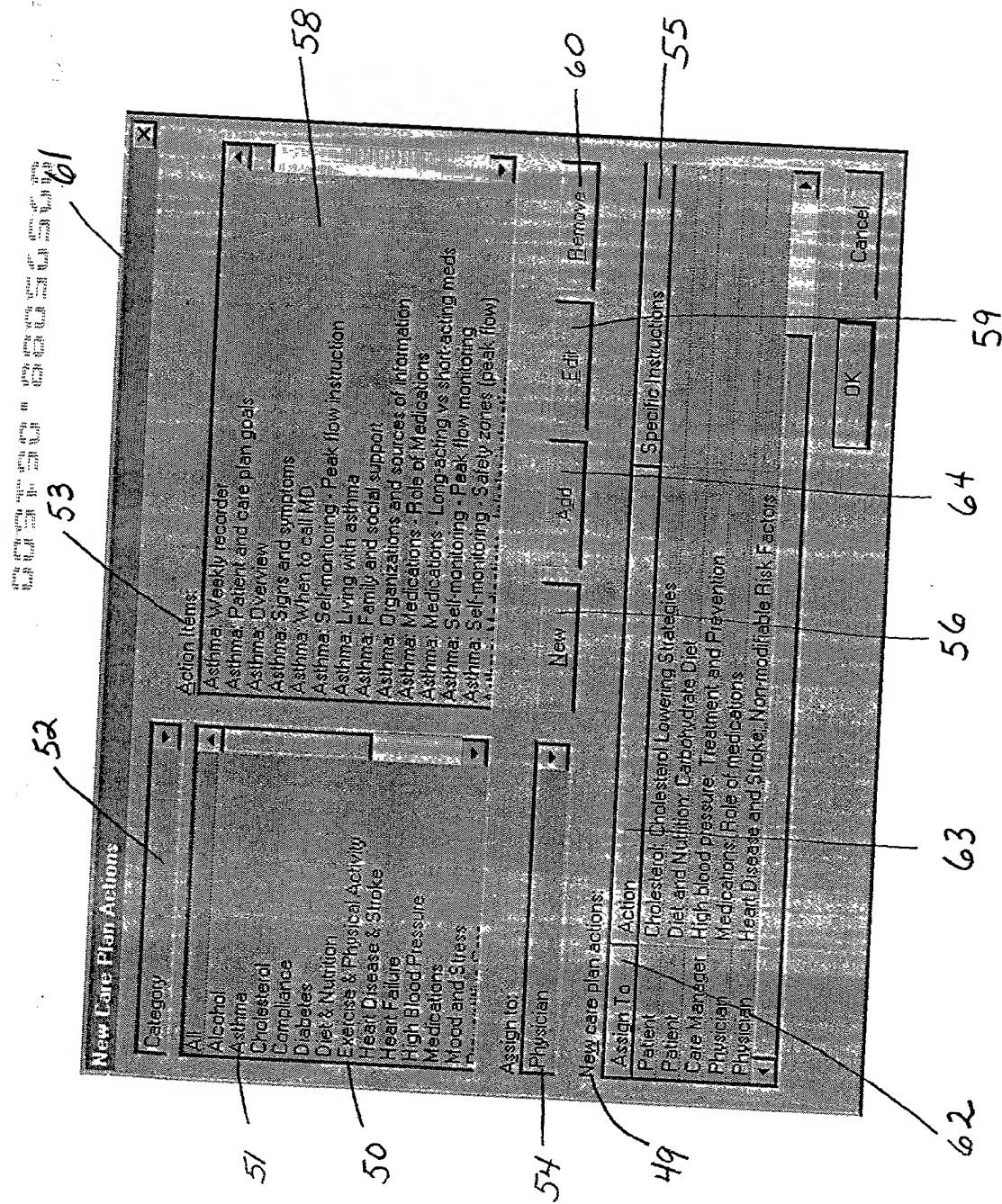


Fig. 3

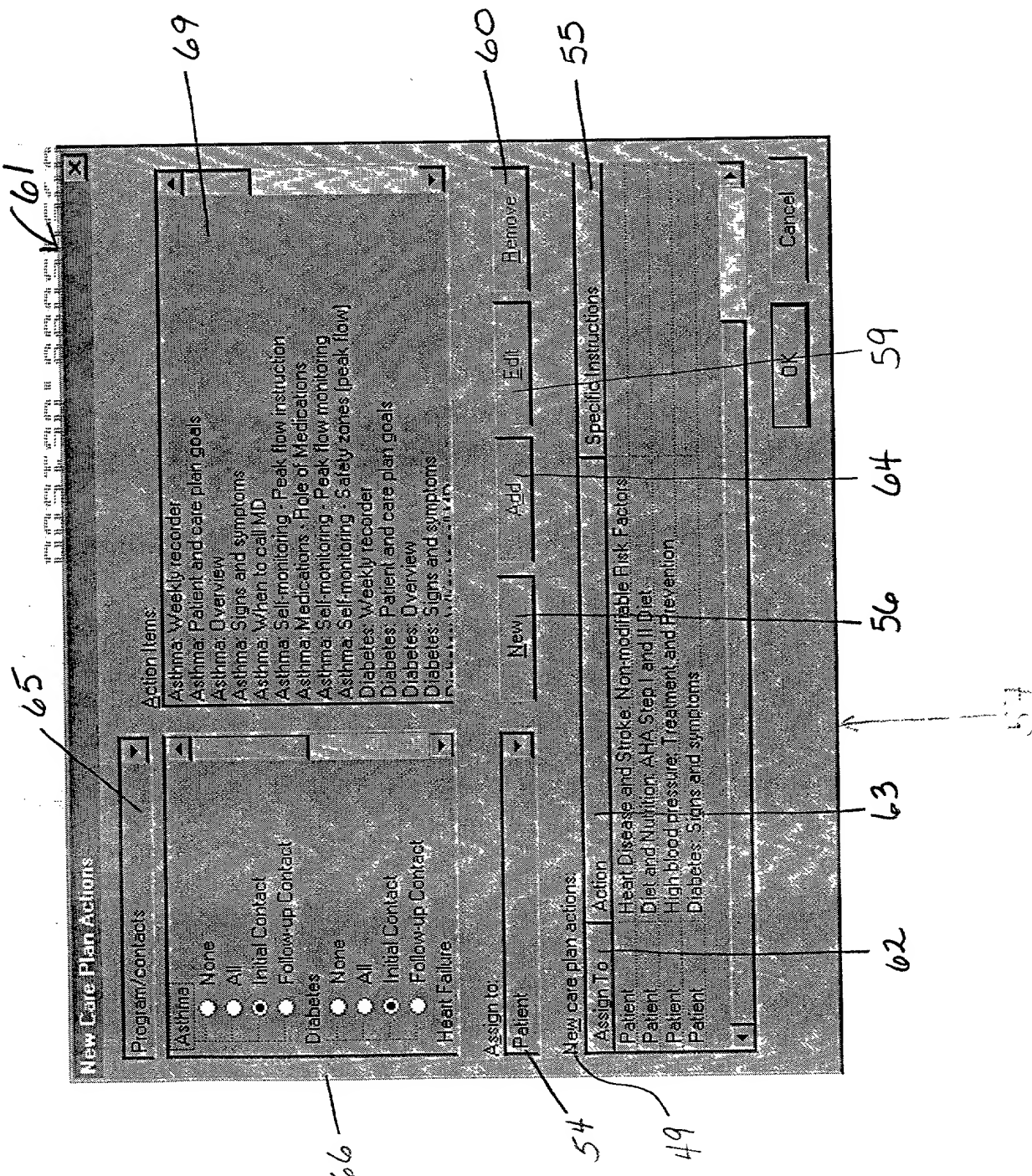


Fig. 5

Category

All
Alcohol
Asthma
Cholesterol
Compliance
Diabetes
Diet & Nutrition
Exercise & Physical Activity
Heart Disease & Stroke
Heart Failure
High Blood Pressure
Medications
Mood and Stress

Action Items

Diabetes: Weekly recorder
Diabetes: Patient and care plan goals
Diabetes: Overview
Diabetes: Signs and symptoms
Diabetes: When to call MD
Diabetes: Living with diabetes
Diabetes: Family and social support
Diabetes: Organizations and sources of information
Diabetes: Glycated hemoglobin
Diabetes: Medications - Role of oral medications
Diabetes: Medications - Role of insulin
Diabetes: Medications - Insulin administration (mixing, injection)
Diabetes: Medications - Insulin self-adjustment

Assign to:

Physician

Care Manager

Patient

Physician

Patient

Care Manager

Physician

Physician

Physician

New

Add

Edit

Remove

Specific Instructions

Cholesterol: Lowering Strategies
High blood pressure: Treatment and Prevention
Medications: Role of medications
Heart Disease and Stroke: Non-modifiable Risk Factors
Diet and Nutrition: AHA Step I and II Diet

OK

Cancel

Fig. 6

FIG. 7 is a screenshot of a software interface for creating a new care plan action.

New Care Plan Actions

Category: All

- Alcohol
- Asthma
- Cholesterol
- Compliance
- Diabetes
- Diet & Nutrition
- Exercise & Physical Activity
- Heart Disease & Stroke
- Heart Failure
- High Blood Pressure
- Medications
- Mood and Stress

Action Items:

- Diet and Nutrition: Healthy Eating
- Diet and Nutrition: AHA Step I and II Diet
- Diet and Nutrition: Carbohydrate Diet
- Diet and Nutrition: Cholesterol Diet
- Diet and Nutrition: Fat and Fatty Acid Diet
- Diet and Nutrition: Sodium Diet

Assign to: Physician

New care plan actions:

Assign To	Action
Patient	Cholesterol: Lowering Strategies
Care Manager	High blood pressure: Treatment and Prevention
Physician	Medications: Role of medications
Physician	Heart Disease and Stroke: Non-modifiable Risk Factors
Physician	Diet and Nutrition: AHA Step I and II Diet

New

Add

Edit

Remove

OK

Cancel

Fig. 7

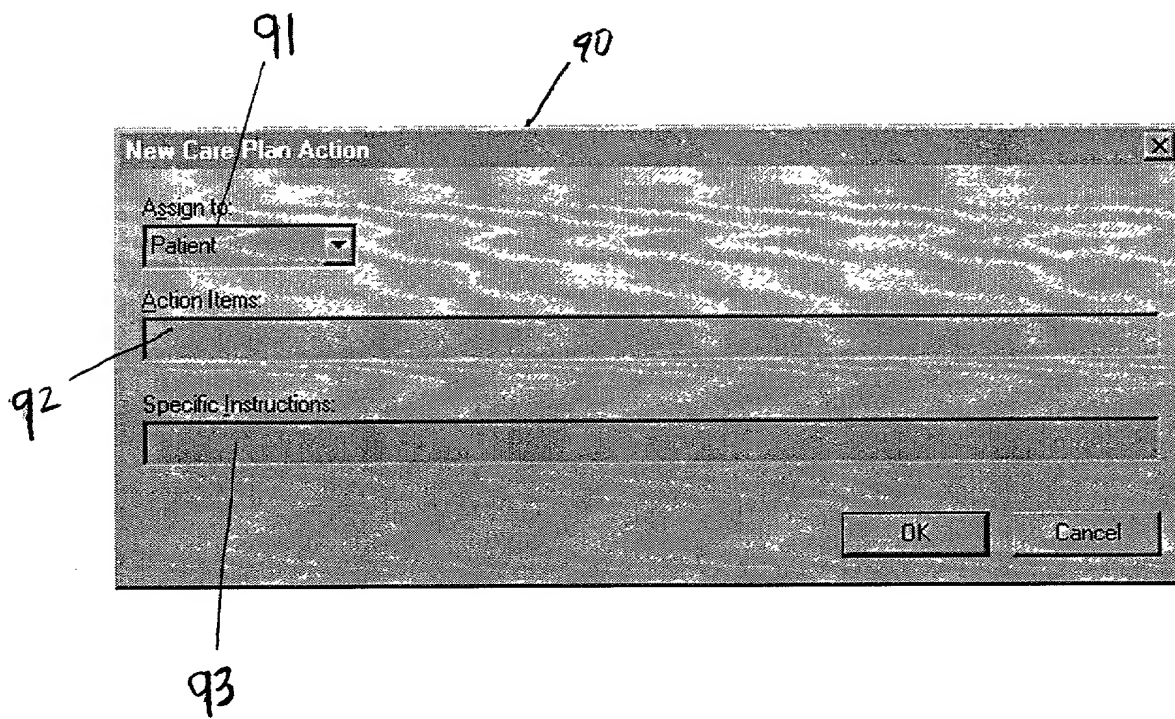


Fig. 8

95

96

97

98

OK

Cancel

×

Edit Care Plan Action

Assign to: Patient

Action Items: Diet and Nutrition AHA Step I and II Diet

Specific Instructions:

Fig. 9

11 131 132 138

InfoMare - Patients Drawer

New Open Edit Refresh Print Export

General My List

General List Selection Criteria

Last name: [Any] Group: [Any] Provider: [Any]

Program enrolled in: [Any] Birth date: [Any] Sex: [Any] Status: Enrolled

Last Name	First Name	Patient ID	Birth Date	Sex	Status	Provider
Aaronson	Sandi	768-34-1524	07/04/1908	Female	Enrolled	
Aaronson	Albert	23492	11/01/1942	Male	Enrolled	
Baker	Winslow	634-24-3456	03/19/1918	Male	Enrolled	
Barker	Michael	23-823-3432	05/09/1970	Male	Enrolled	
Chavez	Julie	281-34-1334	06/08/1963	Female	Enrolled	
Clark	Vivian	MM-234-2400	02/09/1958	Female	Enrolled	
Cortney	Janine	12-23-2333	05/09/1950	Female	Enrolled	
Dobbs	Samuel	90-2345	05/20/1933	Male	Enrolled	
Fennell	Paul	134-203-1234	02/08/1942	Male	Enrolled	
Janson	Lynn	87-34-3444	09/18/1971	Female	Enrolled	
Kelly	Donald	89-4758-12	09/18/1939	Male	Enrolled	
Larkin	Leslie	AA-3434	03/07/1925	Female	Enrolled	
Longden	Alice	AA-2333	11/12/1962	Female	Enrolled	
Lund	Kimberly	90-34-TT	07/18/1940	Female	Enrolled	
Manning	Nancy	DL-30334	05/09/1957	Female	Enrolled	
Moore	Jamie	343-24-4334	11/10/1955	Male	Enrolled	
Morgan	Steven	345-29-2342	04/15/1940	Male	Enrolled	
Morganstein	Patrick	934-37-4833	05/28/1941	Male	Enrolled	
Murray	Phil	654-987-123	03/08/1934	Male	Enrolled	

System Administrator 31 Online

Patent List Aaronson, Sandi A Aaronson, Albert

References Help Options Exit

For Help, press F1

Fig. 10

InformaCare - [Providers Drawer]

1 Patients 2 Providers 3 Tasks

References Help Options Exit

For Help, press F1

New Open Edit Refresh Print Export

Provider List Selection Criteria

Last Name: Provider ID: Specialty: (Any)

Last Name	First Name	Provider ID	Specialty
Evans	Susan	IM102	Internal Medicine
Johnson	Jason	543.56.8972	
Mission	Arthur	628.523.947	
Nowak	Linda	333.56.8000	
Strong	Samantha	754.239.1115	
Towner	Robert	321.584.9977	
Volker	Paul	FP101	Family Practice

Provider List

System Administrator 7 CAP Online

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Fig. 11

FIG. 11 is a screenshot of a software interface for managing provider information. The interface includes a menu bar at the top with options: New, Open, Edit, Refresh, Print, and Export. Below the menu bar is a section titled "Provider List Selection Criteria" which contains input fields for "Last Name", "Provider ID", and "Specialty". A table of providers is displayed below these fields, with columns for Last Name, First Name, Provider ID, and Specialty. The providers listed are: Evans, Susan (IM102, Internal Medicine); Johnson, Jason (543.56.8972); Mission, Arthur (628.523.947); Nowak, Linda (333.56.8000); Strong, Samantha (754.239.1115); Towner, Robert (321.584.9977); and Volker, Paul (FP101, Family Practice). At the bottom of the interface is a "Provider List" button and a status bar showing "System Administrator 7 CAP Online".

InfirmaCare [Tasks Drawer]

New Open Edit Complete Delete Refresh Print Export

Task List Selection Criteria

Task: [Any] Program: [Any] Status: Open Priority: [Any]

Assigned to: [Any] Start action date: [Any] Patient: [Any]

Start Action Date	End Action Date	Assigned To	Status	Priority	Program	Provider
Wed 12/15/1998	Wed 12/15/1998	Administrator, S.	Open	High	Asthma	

References Help Options Exit

For Help, press F1

Task List

System Administrator 1 CAP Online

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Fig. 12

FIG. 12 is a screenshot of the InfirmaCare software interface showing the Task List Selection Criteria and the resulting task list. The interface includes a top menu bar with options like New, Open, Edit, Complete, Delete, Refresh, Print, and Export. Below this is a section for Task List Selection Criteria, which includes dropdown menus for Task, Program, Status, Priority, Assigned to, Start action date, and Patient. The resulting task list is displayed in a table with columns for Start Action Date, End Action Date, Assigned To, Status, Priority, Program, and Provider. The table shows a single task assigned to Administrator, S. with a status of Open, High priority, and Program of Asthma. The bottom of the interface shows the user is System Administrator 1, with CAP and Online status indicators.

InformaCare Patients Drawer

New Edit Refresh Print Reports Close

Demographics Enrollment Patient Questions Medications Clinical Info Notes Care Plan Task List

Patient Demographics Selection Criteria

Demographic groups: All

Information Type	Value
Name	Aaronson, Sandi
Patient ID	766-34-4524
Social Security Number	
Birth date	07/04/1908
Age	91
Patient Group(s)	Group 1
Address	56234 Peach Blossom Parkway, Evergreen, CA, 90145
Day Phone Number	909-555-1221
Evening Phone Number	909-555-1221
Pager/Cellular Phone Number	
Fax Number	
E-mail Address	
Emergency Contact Name	
Emergency Contact Relationship	
Emergency Contact Phone Number	
Sex	Female
Marital Status	
Race	
Primary Language	
Religion	

References Help Options E Mail

For Help, press F1

System Administrator Online

Fig. 13

FIG. 13 is a screenshot of a software interface for a patient's demographic information. The interface includes a top menu bar with options like 'New', 'Edit', 'Refresh', 'Print', 'Reports', and 'Close'. Below this is a 'Patient Demographics Selection Criteria' section with a dropdown menu set to 'All'. The main area displays a table of patient information for 'Aaronson, Sandi', including fields for Name, Patient ID, Social Security Number, Birth date, Age, Patient Group(s), Address, Day Phone Number, Evening Phone Number, Pager/Cellular Phone Number, Fax Number, E-mail Address, Emergency Contact Name, Emergency Contact Relationship, Emergency Contact Phone Number, Sex, Marital Status, Race, Primary Language, and Religion. The 'Sex' field is highlighted in red and shows 'Female'. At the bottom, there are buttons for 'References', 'Help', 'Options', and 'E Mail', along with a footer indicating 'For Help, press F1' and 'System Administrator Online'.



Patients



Providers



Tasks

References

Help

Options

Exit

- Patient Questions
- Care Plan Actions
- Medications
- Clinical Information
- Note
- Task

Criteria

Program

Status

[Apply]

Program	Status	Enroll Date	Disenroll Date	Disenroll Reason
System Enrollment Status	Enrolled	07/16/1997	03/13/2000	Patient changed Health Plan
Asthma	Disenrolled	03/13/2000		
Diabetes	Enrolled	12/20/1999		
Healthy Lifestyle	Enrolled	12/15/1999		
Heart Failure	Enrolled	12/20/1999		

Patient List

A Aaronson, Sandi

System Administrator

5

Online

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
COMBINED DECLARATION, POWER OF ATTORNEY & PETITION

TYPE OF DECLARATION

- ☒ Utility
- ☐ Design
- ☐ Supplemental
- ☐ Divisional
- ☐ Continuation
- ☐ Continuation-in-part
- ☐ National Stage of the PCT

INVENTORSHIP AND SPECIFICATION IDENTIFICATION

Our residences, post office addresses and citizenship are as stated below next to our names; we believe we are the original, first and joint inventors of the invention entitled:

**“SYSTEM AND METHOD FOR DEVELOPING AND MANAGING THE
HEALTHCARE PLANS OF PATIENTS WITH ONE OR MORE HEALTH
CONDITIONS”**

as described and claimed in the specification which

- ☒ is attached hereto.
- ☐ was filed on _____
 - ☐ as U.S. Serial Number. ; or
 - ☐ Express Mail No. _____ (as serial number not yet known); and
 - ☐ was amended on _____.
- ☐ was described and claimed in PCT International Application No. PCT/____/____
filed on _____; and
 - ☐ as amended under PCT Article 19 and/or 34 on _____.

REVIEW OF PAPERS AND DUTY OF CANDOR

Each of states as follows: I have reviewed and understand the contents of the specification identified above including the drawing and claims as amended by any amendment referred to below; and I acknowledge my duty to disclose information of which I am aware which is material to the examination of this application, in accordance with 37 CFR 1.56(a); and

- ☐ in compliance with this duty there is attached an information disclosure statement.

PRIORITY CLAIMS

I hereby claim **foreign priority** benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign applications for patent applications for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year/Filed)	Yes	No

I hereby claim the benefit under Title 35, United States Code, § 120 of any **United States Application(s)** listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States Application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

_____	_____	_____
(Application Serial No.)	(Filing Date)	(Status: Patented, Pending, Abandoned)

DECLARATION

Each of us states as follows: I declare that all statements made above of my own knowledge are true and all statements made on information and belief are believed to be true; and these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

POWER OF ATTORNEY

Each of us states as follows: I hereby appoint the following patent attorneys and/or patent agent(s) with full power of appointment, substitution and revocation to prosecute this application, to make alterations and amendments thereto, to receive the patent, and to transact all business in the Patent Office connected therewith.

KEVIN McMAHON Reg. No. 22,423
DAVID C. RADULESCU, Reg. No. 36,250
STEVEN D. GLAZER, Reg. No. 29,641

STEPHEN D. KAHN, Reg. No. 25,624
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New York, N.Y. 10153
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Facsimile: (212) 310-8007

PETITION

Wherefore, we pray that Letters Patent be granted to us for the invention or discovery described and claimed in the above-mentioned specification and claims, and we hereby subscribe our names to the foregoing Declaration, Power of Attorney & Petition with references to the above-identified specification and claims.

SIGNATURES

Name of first inventor: Kenneth Babamoto

Post Office Address:

Citizenship: United States

Residence:

Inventor's Signature: _____ Date: _____

Name of second inventor: Benjamin Shamsian

Post Office Address:

Citizenship: United States

Residence:

Inventor's Signature: _____ Date: _____

Name of third inventor: Michael Steinmetz

Post Office Address:

Citizenship: United States

Residence:

Inventor's Signature: _____ Date: _____